

| *Many physicians have served in Samoa, but few have written about the health problems of these enchanting islands.*

Notes on Public Health in American Samoa

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AMERICAN SAMOA is the only United States possession south of the Equator. Just within the southern limit of the Torrid Zone and south of Hawaii, it comprises the smaller eastern end of an archipelago of islands, the western end being a New Zealand trust territory, and formerly a German possession.

American Samoa is made up of seven islands, chiefly Tutuila and the three small islands known as the Manua group. The inhabitants are Polynesians, of the same race and with almost the same language as Tahitians, the Tongans, and the Hawaiians. In number 18,000, these people live on the narrow rims of the islands, between the volcanic mountains that cover most of the area and the beaches.

The island economy is agricultural. The Samoans cultivate taro, breadfruit, and coconut. They catch shellfish and fish and raise pigs and chickens. Several or many families

form a village, presided over by village elders and an elected chief. The primary loyalty of each Samoan is to his village, which gives him complete security in exchange for his work and faithfulness.

The Samoans are Christians, although their religion incorporates some of the rudiments of their earlier beliefs. Their manner of life has changed little since Margaret Mead wrote her famous "Coming of Age in Samoa" three decades ago.

Under Navy Administration at First

When the United States Government, at the request of the chiefs of eastern Samoa, and as part of a treaty arrangement with England and Germany, took over the sponsorship and the protection of the islands at the end of the 19th century, the task of administration was given to the Department of the Navy. A high-ranking naval officer was selected as Governor, assisted by a staff of Navy administrative and technical personnel.

A legal code, which combined basic American law with a respectful regard for Samoan custom, was adopted, and a strong legislative body composed of all the senior chiefs was established. Roads were built, utilities created, and homes, offices, workshops, and warehouses were erected.

The harbor at Pago Pago, considered one of the best in the world and made known to literature by Somerset Maugham's "Rain," became

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the site of a naval base. During World War II, Tutuila was a Marine base, and scores of thousands of Americans were temporary residents there.

In 1951, by Presidential decree, the Navy closed the base, and the Department of the Interior was given administrative responsibility for American Samoa and for the Trust Territory of the Pacific Islands.

Since then, the Governor of American Samoa and his administrative and technical employees have been civilians, and usually American citizens. Samoans themselves are assuming more and more of the governmental positions as they acquire the necessary training, particularly in the field of teaching.

The Public Health Structure

The Government departments are six: administration, justice, public works, Samoan affairs, education, and public health.

The Public Health Department is responsible for both preventive and curative activities.

The department's medical staff comprises a chief, a deputy (whose special functions are in the field of preventive medicine and the supervision of the district dispensaries), a surgeon, an internist, a pediatrician, and a tuberculosis specialist.

Staff members are usually Americans, although physicians educated in Europe have also been employed.

The nursing staff consists of a chief, the head of the nursing school, a public health nurse, and a tuberculosis head nurse. These positions are provided in the organization plan but are frequently vacant because of recruitment difficulties, so that doubling up of functions is common. (The same applies to the physician staff.) The duty period is 2 years.

There is a much larger cadre of Samoan physicians and nurses. The 12 Samoan physicians have the degree S.M.P., the abbreviation for Samoan medical practitioner. They are not considered fully trained physicians at graduation by our standards; their training was received either at the Suva Medical School in the Fiji Islands or at a similar institution which the Navy maintained for a time at Guam.

Promising young men from the various is-

lands of the South Pacific who speak some English are given a training which enables them to do simple medical practice. Some, by later serving for long periods under American physicians, become highly experienced and can be entrusted with major responsibilities.

Eight of the Samoan medical practitioners are at the Government of American Samoa Hospital, each in charge of a ward or clinic. The others serve in the four district dispensaries. During their early years they are rotated through the various services in order to give them broad experience.

The Samoan medical practitioners relieve the physicians of many of the routine duties: They take histories, perform and record physical examinations, and make progress notes. They write routine orders and keep the outpatient clinic records. They screen night calls and see to routine matters.

A Samoan medical practitioner is at the side of the physician most of the time, not only for his own training, but to give assistance and to act as translator since few of the patients speak English.

Including active graduates and present students, there are about 100 Samoan nurses who were all trained at the hospital and given the degree of S.N., which stands for Samoan nurse. The chief Samoan nurse was a member of the first graduating class almost 40 years ago.

Samoan nurses are carefully chosen Samoan women; they receive 4 years of training under Samoan and American nurses, somewhat comparable to the 3-year basic training in the United States, but with less academic and more practical training, rotating through all the services. Many marry and are lost as full-time nurses, but they remain a force for health education in the villages to which they return.

All physicians and nurses are government employees and enjoy high prestige. Nursing is about the only profession that a Samoan woman is permitted by her culture to enter. In the social scale, the Samoan physicians rank next to the chiefs and the pastors.

The Government of American Samoa Hospital is located on the west shore of Pago Pago Bay, on filled land, a scant half mile from the governmental offices and population center. It was built after World War II by uniting wooden

2-story military barracks in series, and putting the main service, administrative, and clinic functions into a new central concrete section.

The hospital can accommodate 250 patients. The largest number of occupied beds is for tuberculosis patients; next in order are those for pediatrics, surgery, medicine, and obstetric patients.

A small building separate from the hospital houses the leprosarium.

The Samoan nurses in residence live in remodeled barracks in front of the hospital, and the American employees live in cottages along the edge of the bay, a few hundred feet away.

The curve of foothills around the hospital grounds, heavily wooded, almost hides Utulei, one of the largest of the island's villages, where many of the Samoan employees live.

The district dispensaries were first established by the Navy and operated by pharmacist mates. They are located at outlying centers of population. Two are on the Manua Islands, 80 miles from Tutuila, and are connected by radio and by government steamer, which makes scheduled and emergency trips.

The larger of the dispensaries has a 10-bed hospital and the most experienced of all the Samoan medical practitioners.

Each dispensary is well supplied with drugs and first aid equipment, 1 or 2 beds for urgent care or deliveries, a minor surgery, and staffed by a Samoan medical practitioner and 2 or more district nurses. The dispensaries give first aid, treat minor illnesses, and perform normal deliveries. More serious cases and most major surgery are sent to the hospital.

With this staff and medical plant, the general and special medical and public health functions are conducted in a conscientious and thoroughgoing manner. The Samoan medical system ranks high among those of the Pacific Islands. The pioneering efforts of many Americans, Navy and civilian, contributed much, but the major factor in the success of the system was the intelligence and cooperation of the Samoans themselves.

No Malaria, No Syphilis

In approaching the special disease problems of the islands—all in the field of transmissible

diseases—one should first note that there have never been recorded any cases of malaria or syphilis although these diseases are common elsewhere in the South Pacific.

The absence of a suitable vector explains the freedom from malaria. Freedom from syphilis has been alleged to be due to the fact that most Samoans have had an episode of yaws early in life.

Yaws is a common problem but no longer a serious one because of the effectiveness of treatment in the early stages.

The Navy established yaws teams which went from village to village, treating everyone with lesions or suspected lesions of the skin. Arsenicals were used at first, and later penicillin. Severe lesions of active destructive yaws are rarely seen today.

Traveling teams are not now used, but dispensary nurses in their work in the villages find the yaws cases and send them to the hospital for treatment or treat them on the spot.

Intestinal parasitic infestation is almost universal after early childhood. Routine stool examinations were formerly made at the hospital, but since most of the patients were found to be positive for one or, more commonly, several parasites, this examination is now done only when especially indicated.

The Samoans tolerate their parasites well. *Ascaris* and *Trichuris* are the most common. *Ancylostoma* is of moderate frequency. Because they may play a secondary role along with malnutrition, in the serious pneumonias of early childhood, "deworming" clinics are held for children of all ages regularly at the beginning of each school semester.

The Government of American Samoa has been sending patients with leprosy to Makogai in the Fiji Islands where there is an excellent large leprosarium. The sufferers from Hansen's disease are thus sent 800 miles from home, and many, at least in the past, never return. This circumstance makes persons with the disease reluctant to seek treatment.

Although the Makogai institution is pleasantly located, and well run, with up-to-date treatment, and the Samoans carry on their own village life there, separated from the Fijis, the love of their own islands and villages at home is

strong, and they understandably do not want to go away.

About 40 American Samoans are at Makogai (pronounced *Makognai*). The reluctance of the others to seek treatment has been partially remedied by the building of a 10-bed leprosarium behind the Government of American Samoa Hospital, for isolation, observation, and initial treatment. The present plan is to enlarge the leprosarium or to build a small colony nearby for all of the leprosy patients on Tutuila. With modern drugs and ambulant treatment, a small unit may suffice.

Filariasis and Tuberculosis

The two chief transmissible diseases are filariasis, and that special plague of the South Sea Islanders, tuberculosis. Acute bacterial pneumonia is the chief cause of death among the Samoans.

Filariasis, which was of considerable importance among military men stationed in many of the South Sea Islands during World War II, is a common and serious disease, though fortunately its chief sequela, elephantiasis, is rapidly decreasing in prevalence. Elephantiasis results from repeated exposure over a long period of time.

The parasite causing filariasis is *Wucheria bancrofti*. The vector is *Aedes polynesiensis* (until recently called *Aedes pseudoscutellaris*), which inhabits the bush only and has a very limited flight range, so that the disease is not contracted in the villages. Since, however, a staple food on the island is taro root, much of which is cultivated in the bush, the Samoans, particularly the men, are exposed.

A special filariasis clinic is held weekly at the hospital. Hetrazan is fairly effective against microfilaria, and courses of this therapy are given to patients and suspects. Surgery is sometimes necessary for the disfiguring end effects, especially for filarial hydrocele.

Control of the vector mosquitoes is difficult. Special attention to this problem is being given in Tahiti, where the disease is even more serious, by a research institute for tropical diseases under the leadership of Dr. John Kessel of the University of California at Los Angeles.

Tuberculosis is the second leading cause of

death and is the chief public health problem. Almost half the bed capacity of the hospital is used for the treatment of tuberculosis. An aggressive case-finding program was put into effect in the last 2 years, with routine chest films of all hospital admissions, a weekly chest clinic, and tuberculin testing of high school students and other groups.

As in many Pacific islands, tuberculosis became a veritable acute plague after its introduction in Samoa by Europeans more than a hundred years ago, with the coming of the first missionaries. The verbal traditions handed down from those days describe the severity of the epidemic.

Today, the Samoan seems to have traveled well along the road toward increased immunity. The acute forms of tuberculosis are now not often seen, except for tuberculous meningitis in young children. As in the continental United States, the usual forms found are the pulmonary exudative-fibrotic and fibro-caseo-cavitary varieties. Scrofula in children still occurs.

Minor collapse measures and antibiotic therapy were introduced by the Navy and intensified during the past 2 years. Thoracic surgery is a present lack, and the possibility of using a visiting thoracic surgeon should be further explored. Thoracoplasty and excisional surgery will help clear the beds now occupied by some who otherwise will not be able to be rid of their cavities and who therefore continue to be infectious.

The enthusiastic cooperation of the Samoan is of great value in the control of tuberculosis: He reports early for treatment of symptoms; he is cooperative and quite content to stay in the hospital until discharged.

In 1952 the death rate from tuberculosis among American Samoans was about 80 per 100,000. This figure is probably a minimum, for some, not many, undiagnosed tuberculosis deaths occur in the villages.

Young adults and young women especially are the most affected age and sex group. The current tuberculosis picture may be likened to that found in the United States 30 years ago. Although the resources of the hospital are being strained by the large number of cases of tuberculosis found in the last 2 years, the prospect of effective control in the near future is good.

In such a circumscribed area with little outside contact, except with Hawaii and Western Samoa, and with good control measures, one may hope for tuberculosis eradication.

Acute bacterial pneumonia occurs especially in young children beyond infancy. The infant at the breast has plenty of mother's milk in almost all cases; he is weaned late and then turned over to an older sibling for care, for the mother usually has another baby or household duties to care for. At this time the child's nutrition is poor, and intestinal parasites first attack the child. Whatever the reason, in this age group, bacterial pneumonias of hyperacute type and high mortality are common; the patients often enter the hospital in extremis after a very short illness. This problem involves nutrition, parasitic infestation, development of resistance, and probably other factors, such as physical exposure.

Tetanus, especially secondary to cuts from coral while swimming, is not uncommon, so immunization is given against it. Other immunizations have long kept the island free of smallpox and diphtheria. Meningococcic men-

ingitis is still seen, but not in epidemics. Pyogenic skin infection, especially in children, is common. Rheumatic heart disease and acute rheumatic fever in children are often found.

Psychoses are rare, and psychosomatic symptoms are either rare or rarely brought to medical attention. Occasional cases of hypertension, hyperthyroidism, and peptic ulcer occur. There is little suicide or homicide. The chief accidental death causes are drowning and falling from the tops of coconut trees.

The Samoan leads a calm, happy life, with not much work and great contentment, cradled all his life in the physical and psychological security of a village culture. If he could be rid of infectious diseases his health status would be among the world's best. The tremendous strides made since the introduction of Western medicine indicate that this is more than a visionary promise. The medical and public health machinery is in place, and operating; the cooperation and intelligence of the Samoan is high.

The prospect for a health paradise in the middle of the Pacific is good.

Public Health Education

With the aim of improving public understanding of the needs of the sightless, the municipal radio station of New York City, WNYC, broadcasts special programs provided by the American Foundation for the Blind.

WNYC has recently completed the broadcast of two series entitled, "The Torch Bearers" and "Man With a Question" and has scheduled a third, "There is No Night."

The station has broadcast a series of interviews also on the problems of the blind. These are called "Around New York."

During a civil defense exercise in New York—the Conelrad test involving all radio stations when some type of "spoken word" programming is essential—WNYC broadcast a talking book for the blind.